

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 03/00508

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: C07D 401/04, C07D 403/04, C07D 401/14, C07D 403/14, C07D 413/14,
A61K 31/404,, A61K 31/4427, A61K 31/495
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI DATA, CHEM.ABS.DATA, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 0125220 A1 (KINETIX PHARMACEUTICALS INC), 12 April 2001 (12.04.01), RN333730-27-1, 333728-93-1, page 89, no. 517, page 220, page 303, page 320, page 335, page 348, page 353, page 3, line 1 - page 4, line 2, the claims --	1-24,34-39, 41
X	WO 0210158 A2 (F. HOFFMANN-LA ROCHE AG), 7 February 2002 (07.02.02) --	1-24,34-39, 41
X	WO 0071129 A1 (BRISTOL-MYERS SQUIBB COMPANY), 30 November 2000 (30.11.00), page 9, line 28 - page 10, line 6; page 13, line 28 - page 14, line 12; page 81, line 25 - page 88, line 2, the claims --	1-24,34-39, 41

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

12 August 2003

Date of mailing of the international search report

19 -08- 2003

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 0132653 A1 (CEPHALON, INC.), 10 May 2001 (10.05.01), page 14, line 24 - line 30; page 69, no. 297, page 80, the claims --	1-24,34-39, 41
X	WO 9742187 A1 (ZENECA LIMITED), 13 November 1997 (13.11.97), page 2, line 17 - page 3, line 4; page 31, line 20 - line 29, the claims --	1-12,23, 31-41
A	STN International, File CHEMCATS, accession no. 2001:15770, 14 May 2001, Pharma Library Collection, "2(1H)-Quinoxalinone, 3-(2-hydroxy-1H-indol-3-yl)-", CAS Registry No RN 312706-99-3 --	1-24,34-39, 41
A	STN International, File CAPLUS, CAPLUS accession no. 1967:516779, Document no. 67:116779, Bruni, Paolo et al: "Enolizable cyclic ketones. I. Reaction with activated heteroaromatic N-oxides"; & Ann. Chim. (Rome) (1967), 57(6), 688-97 --	1-24,34-39, 41
A	EP 0667340 A1 (NEUROSEARCH A/S), 16 August 1995 (16.08.95) -- -----	1-24,34-39, 41

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Information on patent family members

26/07/03

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Patent document cited in search report			Publication date	Patent family member(s)		Publication date
WO	0125220	A1	12/04/01	AU	1075401 A	10/05/01
				CA	2386218 A	12/04/01
				EP	1218360 A	03/07/02
				JP	2003511378 T	25/03/03
WO	0210158	A2	07/02/02	AU	9370201 A	13/02/02
				BR	0112965 A	08/07/03
				CA	2417277 A	07/02/02
				EP	1307447 A	07/05/03
				NO	20030328 A	22/01/03
				US	6479490 B	12/11/02
				US	2002052397 A	02/05/02
				US	2002188018 A	12/12/02
WO	0071129	A1	30/11/00	AU	4852400 A	12/12/00
				BR	0010482 A	23/04/02
				CA	2373990 A	30/11/00
				CN	1351498 T	29/05/02
				CZ	20014169 A	16/10/02
				EP	1183033 A	06/03/02
				IL	144977 D	00/00/00
				JP	2003500359 T	07/01/03
				NO	20015650 A	20/11/01
WO	0132653	A1	10/05/01	AU	1581101 A	14/05/01
				BG	106771 A	31/03/03
				BR	0015568 A	10/06/03
				CA	2389807 A	10/05/01
				CN	1387528 T	25/12/02
				CZ	20021569 A	12/03/03
				EP	1226141 A	31/07/02
				HU	0203203 A	28/02/03
				JP	2003513091 T	08/04/03
				NO	20022095 A	11/06/02
				SK	6172002 A	09/01/03
				TR	200201225 T	00/00/00
				US	6455525 B	24/09/02
WO	9742187	A1	13/11/97	AU	2647597 A	26/11/97
				EP	0912557 A,B	06/05/99
				GB	9707800 D	00/00/00
				JP	2000510115 T	08/08/00
				US	6265411 B	24/07/01
				ZA	9703844 A	06/11/97
EP	0667340	A1	16/08/95	JP	8034771 A	06/02/96
				US	5565580 A	15/10/96

INTERNATIONAL SEARCH REPORTInternational application No.
PCT/SE03/00508**Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: **18-22**
because they relate to subject matter not required to be searched by this Authority, namely:
see extra sheet*
2. ☒ Claims Nos.: **13, 18 all in part**
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
see extra sheet**
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see extra sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: **1-24, 34-39, 41**

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

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*Claims 18-22 relate to methods of treatment of the human or animal body by surgery or by therapy or diagnostic methods practised on the human or animal body (Rule 39.1(iv)). Nevertheless, a search has been executed for these claims. The search has been based on the alleged effects of the compounds or compositions. These alleged effects must be well defined diseases or conditions.

**The expression "conditions associated with glycogen synthase kinase-3" in claims 13 and 18 may relate to a number of different disorders and conditions, which can not be clearly defined by this expression. Thus, the search has mainly been restricted to the diseases mentioned in claims 19-22 and 14-17, respectively.

The International Search Authority considers that there are four inventions covered by the claims indicated as follows:

I: Claims 1-24, 34-39 and 41 in part directed to compounds according to formulae Ia, Ib, XXVII and XXVIII, pharmaceutical formulations comprising these compounds, use, process and intermediates for the preparation thereof.

II: Claims 25-27 and 41 in part directed to compounds according to formula XXV and their use as intermediates.

III: Claims 28-30 and 41 in part directed to compounds according to formula B (XV, XVIII, XVIIIa, XXI, XXIII) and their use as intermediates.

IV: Claims 31-33, 40 and 41 in part directed to compounds according to formula C (III, V, IX, XII, XIII) and three compounds specified in claim 40 and their use as intermediates.

The ISA has carried out a partial search which relates to the invention I mentioned above.

The applicant is invited to pay additional fees for each of the inventions II-IV as listed above.

The present application has been considered to contain four inventions which are not linked such that they form a single general inventive concept, as required by Rules 13.1, 13.2 and 13.3 PCT for the following reasons:

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According to Rules 13.1 and 13.2, an international application shall relate to one invention only or to a group of inventions linked by one or more of the same or corresponding "special technical features", i.e. features that define a contribution which each of the inventions makes over the prior art. In order to fulfil the requirements of unity of invention, it is necessary that the intermediate compounds are closely interconnected with the end products as well as with themselves. Such close connection requires that the essential structural part of the end product is incorporated by the intermediate. However, the present application lacks a single general inventive concept based on the above principle. This leads to the presence of the subjects listed above, each falling under its own restricted inventive concept.